Intelligent Product Data

Presented By

Ms. Ann Minniti

Ms. Judy Furmato

HQ Communications-Electronics Command

Logistics and Engineering Operations Directorate

Fort Monmouth, NJ

What is Intelligent Product Data?

- Intelligent Product Data are the native CAD/CAM/CAE databases that our contractors create, use and maintain to:

    - Allow products to be accurately modeled and their performance simulated in software
    - Directly support design, manufacturing, testing, and maintenance

- Utilizes commercially available hardware and software

- Intelligent product data is NOT Level-3 drawings or written specifications

"IPD is not a deliverable -- It is a Tool"

Background

- **Industry has evolved the technologies and processes needed to effectively use and manage intelligent product data over the last 20 years**
  - **Wide industry acceptance and usage: > $8B invested in hardware, software and training in 1995**
  - **Found in all types and sizes of businesses**

- **Industry uses intelligent product data as a tool to:**
  - **Reduce time-to-market and cost**
  - **Provide performance-based definitions of requirements to suppliers**
  - **Enable concurrent engineering and teaming**
  - **Capture design intent and functionality for future re-use**

DoD Has Not Kept Pace

DoD is significantly behind industry and it costs us
- Time
- $$$

Industry
Intelligent Product Data
CAD/CAM
IETMs
PDM

Data Content

DoD
Raster Images
Written Specs
Paper TMs
Drawings

Existing DoD technical data requirements and systems not in alignment with industry practices

Why We Are Doing This

- **DoD MUST:**
  - **Reduce ALT/PLT and unit cost**
  - **Support performance-based acquisition reform**
  - **Keep fielded systems viable for longer than expected**

- **New DoD and DA guidance calls for extensive use of modeling and simulation to support design, engineering and logistics functions as well as IPPD**
  - **Draft DoD 5010.12-M   Data Management**
  - **Draft AR 70-1   Army Acquisition Policy**
  - **DoD 5000.1   Defense Acquisition Directive**
  - **DoD 5000.2-R   DoD Regulation**

Our Legacy Data is a BARRIER
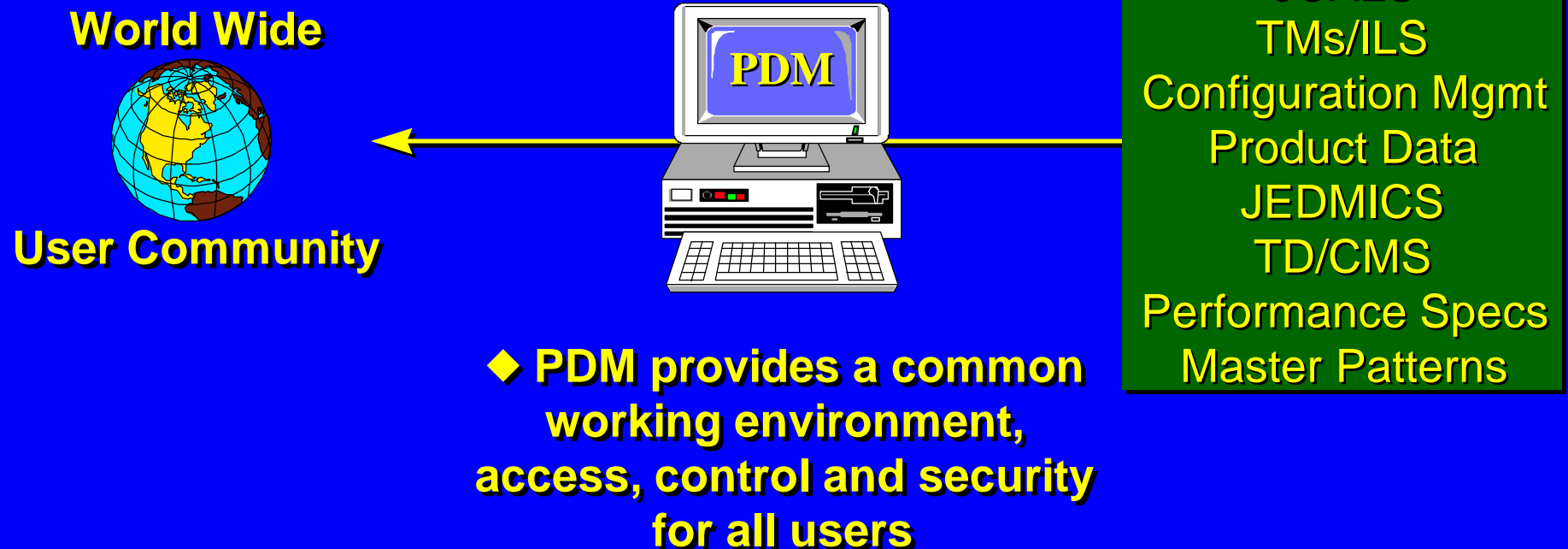
Additional Benefits for DoD

- **Intelligent product data supports multiple functions**
  - **Requirements determination and definition**
  - **Detail design, manufacturing and testing**
  - **Maintenance, sustainment and upgrade**

- **Supports any acquisition strategy from COTS/NDI through full military development**

- **No need for DoD to develop new or unique tools or methodologies - we use what the contractor uses**

- **Data can be maintained by the contractor and accessed as it is created**

- **Increase competition and facilitate design innovation**

How We Are Doing This

- **Acquiring access to intelligent product data during system development and acquisition**

- **Creating intelligent product data from legacy data when it makes sense to do so**

- **Developing the business processes needed to effectively utilize intelligent product data to support research, development, acquisition, fielding, and sustainment**

- **Establishing the core resources and technical capabilities to support all aspects of intelligent product data acquisition, support and re-use for the Team C4IEWS community**

- **Providing a means to access and use the data -** *Product Data Management*

What is Product Data Management ?

◆ **PDM is commercial software used to organize and manage *all* product data…independent of data format**

World Wide

User Community

PDM

Contracts
JCALS
TMs/ILS
Configuration Mgmt
Product Data
JEDMICS
TD/CMS
Performance Specs
Master Patterns

◆ **PDM provides a common working environment, access, control and security for all users**

PDM is *"Part Centric"* Management

What We Have Done So Far

- **Hardware/software/infrastructure**

    - **Improved electronic design automation network IOC Dec 95**

    - ***Cadence, Mentor Graphics, Pro/Engineer, I-DEAS, CV and AutoCad* installed. Others as needed**

    - **Core group of expertise established in EDM Branch of ELA Division, LEO Directorate**

- **Implementation**

    - **Performing pilot projects to establish business processes**

    - **Will migrate proven processes to other IPTs**

    - **Final selection of PDM system underway**

Other Related Activities

- **Business Process Development**
  - **Policy and SOW being developed**
  - **Will need to be tailored for each customer**

- **Legacy Data Conversion**
  - **Process pioneered under Flexible Computer Integrated Manufacturing (FCIM) program**
  - **Converting selected secondary item TDPs using the EDM Lab facilities**

- **Established the in-house capability to convert Master Patterns to industry-standard Gerber digital format**

Data Transfer to Gov't ...if it Makes Sense

Summary

- **The use of intelligent product data is pervasive in industry, but not in DoD. This costs us time and $$$**

- **Intelligent Product Data is a key process improvement for Team C4IEWS**

- **The EDM Branch has made significant progress towards establishing this capability, with continuous improvement under way**

The SINCGARS Pilot Project

- **Test files received from ITT and GDLS in native formats (Pro/Engineer, AutoCad, Cadence, CV)**

- **Contracts are being modified for CECOM to receive intelligent product data from both vendors**

- **SINCGARS intelligent product data base will be the first to be managed via PDM**

- **Entire effort coordinated with PM, TRCS and SINCGARS Integrated Product Team**

Who to Contact

For more information, contact:

Judy Furmato, furmato@doim6.monmouth.army.mil

DSN 992-2356

Ann Minniti, minniti@doim6.monmouth.army.mil

DSN 992-3645

Gary Salomon, salomon@doim6.monmouth.army.mil

DSN 992-2224

Web Site
http://fcim.csdc.com

Demonstration

- **SINCGARS data**
  - **Cadence file for Display Driver (ITT)**
  - **Board layout for FHMUX Resonator CCA (Xetron)**
  - **Pro/Engineer file for RF Power Amplifier (ITT)**

- **Not a slide show or screen capture**
  - **The same data used by the contractor to design and manufacture the radio**
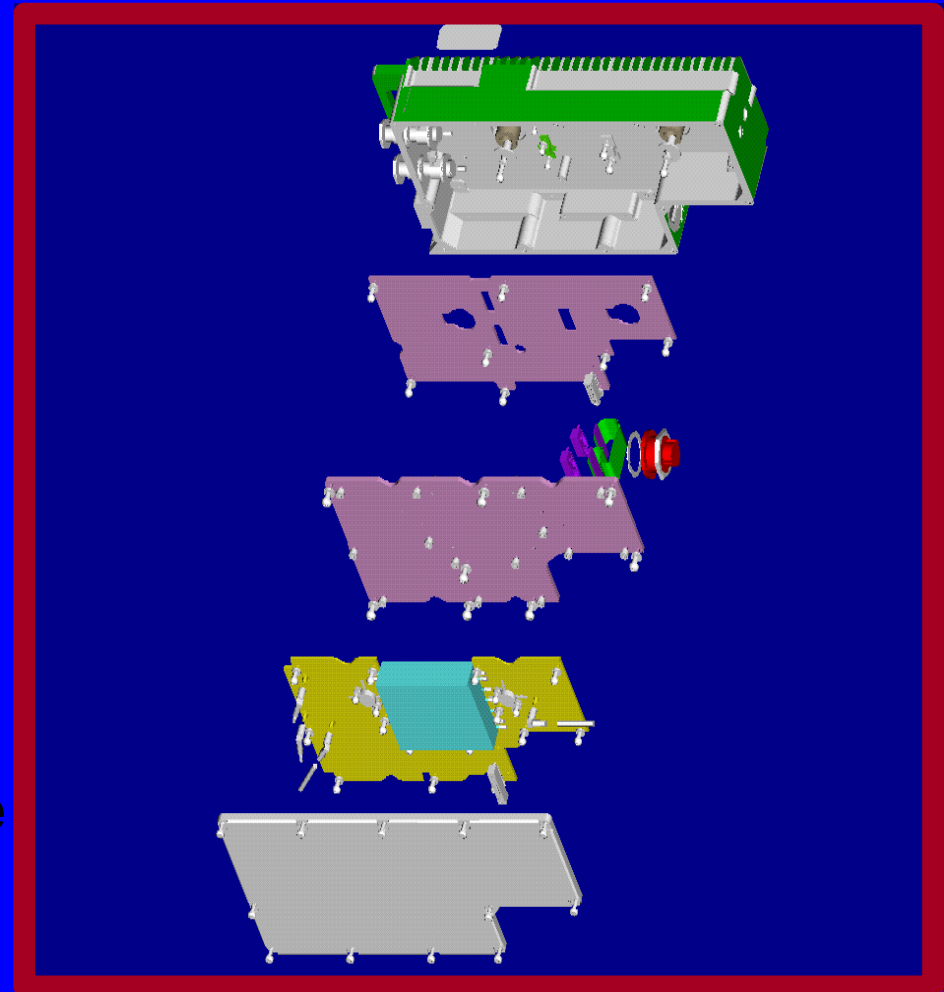
SINCGARS RFPA
(Generated from Pro/E)